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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,971	12/09/2003	Yan-Fei Liu	14545	2206
293	7590	08/24/2005	EXAMINER	
Ralph A. Dowell of DOWELL & DOWELL P.C. 2111 Eisenhower Ave. Suite 406 Alexandria, VA 22314			BERHANE, ADOLF D	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/729,971	LIU ET AL.	
	Examiner	Art Unit	
	Adolf Berhane	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-66 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>6/21/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-25, 28-33, 35-37, 39-42 and 48-65 are rejected under 35 U.S.C. 102(a) as being anticipated by Wei et al. (6,757,184).

Wei et al. disclose a step-down buck converter with full bridge circuit in Figs. 2 and 8. An input for accepting the DC voltage (Vin), the input having a first voltage input and a second voltage input, an output for outputting a converted DC voltage (Vout), the output having a first voltage output and a second voltage output, a high side circuit (20, 22) including a first primary winding (W1) of a first transformer (M) and an auxiliary section (Q1, Q2, Q3, Q4), the high side circuit connected between the first voltage input and the first voltage output, a rectifier circuit (28, 30) having a first secondary winding (W2) of the first transformer (M), the rectifier circuit connected between the first voltage output and the second voltage output, and an output capacitor (C3) connected between the first voltage output and the second voltage output and across the rectifier circuit (28, 30).

3. Claims 1-43 and 48-65 are rejected under 35 U.S.C. 102(a) as being anticipated by Xu et al. (2004/0246748).

Xu et al. disclose a bridge buck converter with self-driven synchronous rectifiers in Figs. 2, 4, 8 and 9. An input for accepting the DC voltage (V_{in}), the input having a first voltage input and a second voltage input, an output for outputting a converted DC voltage (V_{out}), the output having a first voltage output and a second voltage output, a high side circuit (20, 22) including a first primary winding ($W1$) of a first transformer (M) and an auxiliary section ($Q1, Q2, Q3, Q4$), the high side circuit connected between the first voltage input and the first voltage output, a rectifier circuit (28, 30) having a first secondary winding ($W2$) of the first transformer (M), the rectifier circuit connected between the first voltage output and the second voltage output, and an output capacitor ($C3$) connected between the first voltage output and the second voltage output and across the rectifier circuit (28, 30). Fig. 9 discloses rectifier circuit with first and second secondary windings ($W2, W4$).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 43-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wei et al.

Wei et al. discloses the claimed invention except for the range of values. It would have been obvious to one having ordinary skill in the art at the time the invention was

made to provide the optimum range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

6. Claims 43-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu et al. (2004/0246748).

Xu et al. discloses the claimed invention except for the range of values. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the optimum range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Response to Arguments

7. Applicant's arguments filed 6/21/05 have been fully considered but they are not persuasive. Applicant stated that it is unclear in the cited references what would be identified as "high side circuit" and what would be identified as a "rectifier circuit". Applicants attention is directed to Wei et al. reference in Figs. 2 and 8 which shows a high side circuit as 20 and 22, including a first primary winding W1 make the connection a full bridge circuit with a one and only one high side circuit output and a rectifier circuit as 28 and 30. Applicant's attention is also directed to Xu et al. reference in Figs. 2, 4, 8 and 9 which shows a high side circuit as 20 and 22, including a first primary winding W1 make the connection a full bridge circuit with a one and only one high side circuit output and a rectifier circuit as 28 and 30.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adolf Berhane whose telephone number is 571-272-2077. The examiner can normally be reached on Monday- Friday 8 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2838

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Adolf Berhane
Primary Examiner
Art Unit 2838